

pTNMAX (general vector)

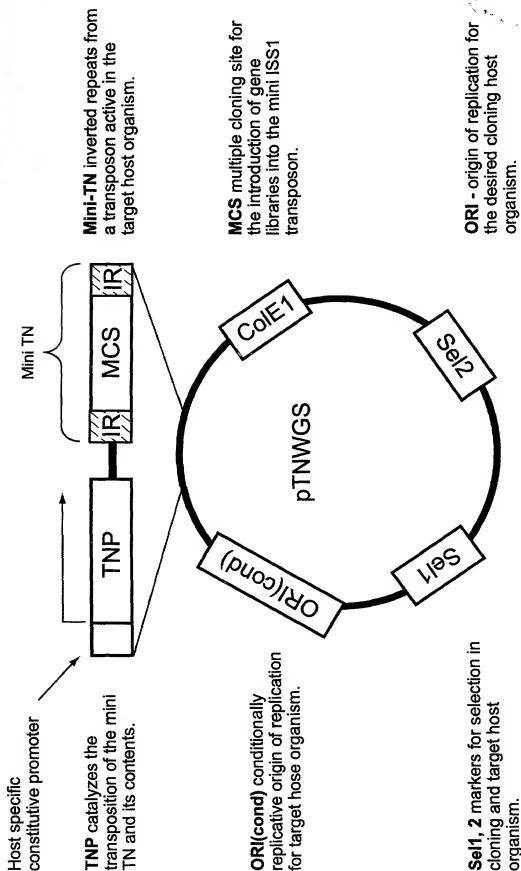
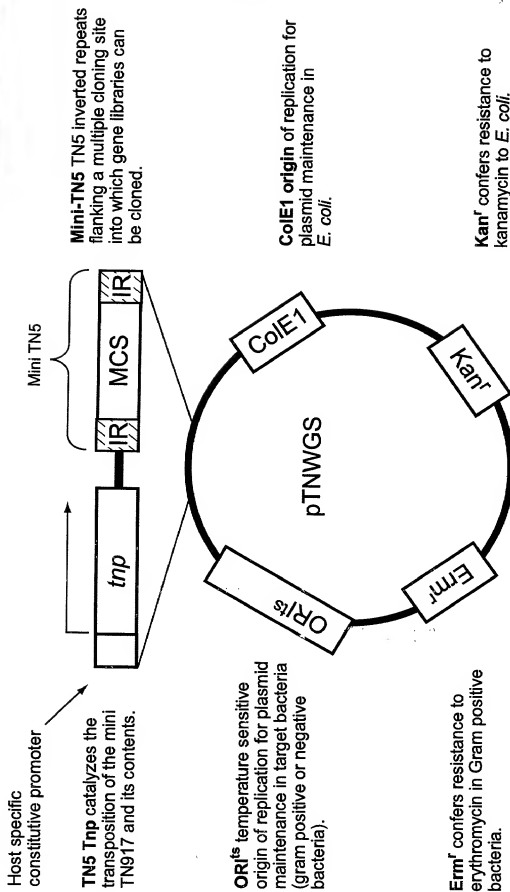


Fig. 1A

pWGS:5



2/9

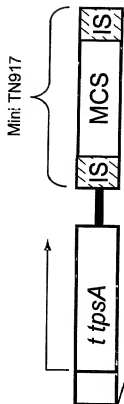
Fig. 1B

pWGS:917

Host specific

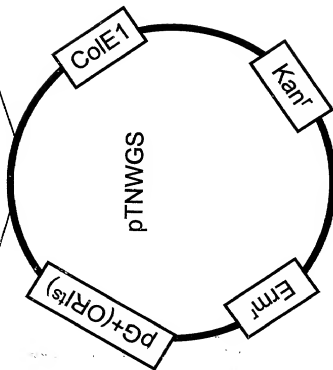
promoter - *nlsA*
promoter for lactic
acid bacteria

N917 TspR TspA catalyzes
the transposition of the mini
TN917 and its contents
transposase/resolvase



MCS multiple cloning site for
the introduction of gene
libraries into the mini TN917
transposon.

PG+ temperature sensitive
origin of replication for plasmid
maintenance in Gram positive
bacteria.



ColE1 origin of replication for
plasmid maintenance in
E. coli.

Erm^r confers resistance to
erythromycin in Gram positive
bacteria.

Kan^r confers resistance to
kanamycin to *E. coli*.

Fig. 1C

4/9

Efficient integration into mammalian
cells using evolved *Mariner* transposons

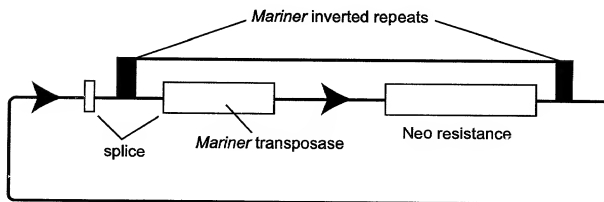


Fig. 2A

Mariner transposons for inserting loxP sites
at loci with desirable expression properties

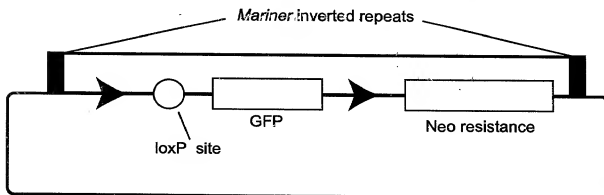


Fig. 2B

Methodology for Isolating Hosts with improved Phenotypes by Whole Genome Shuffling (WGS)

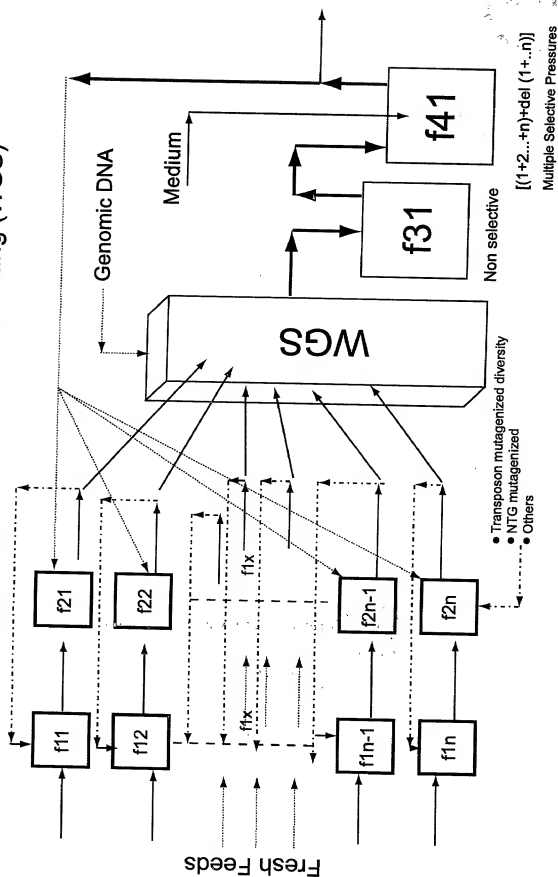


Fig. 3

Shuffling of Genomes *In Vitro*: Formation of transposomes

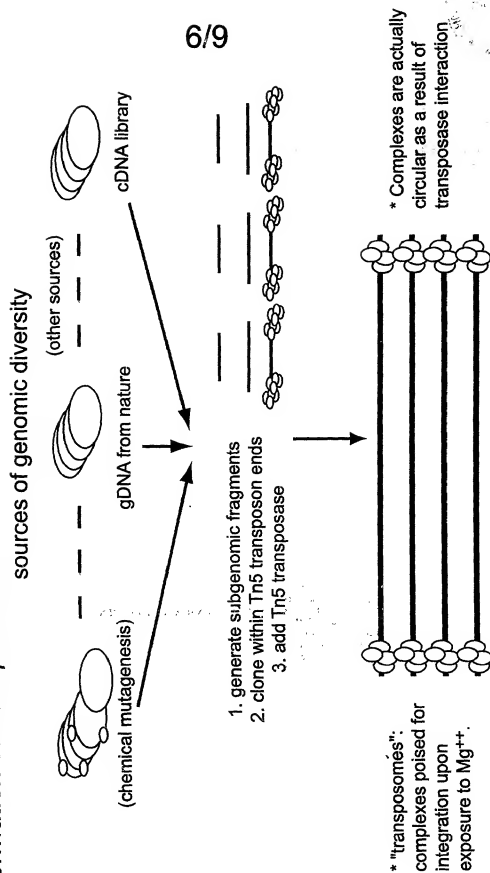
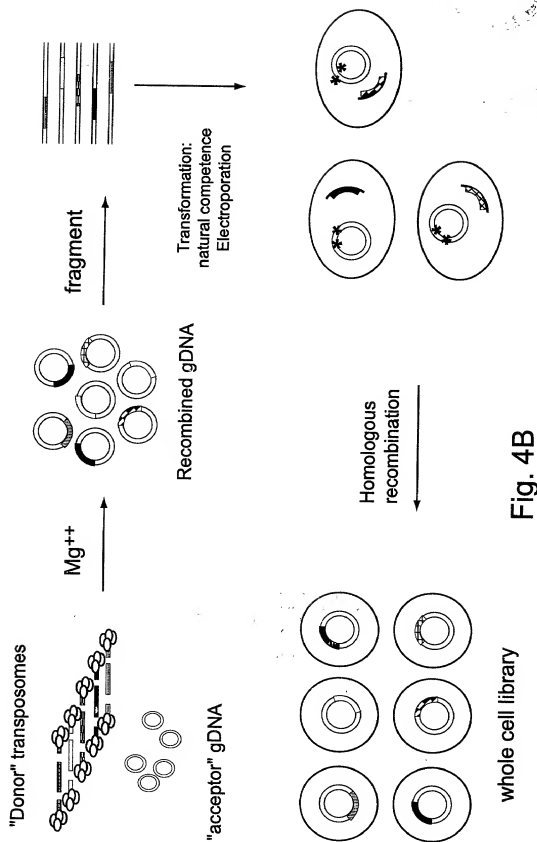


Fig. 4A

Shuffling of Genomes *In Vitro*: Breeding multiple donor genomes with a single acceptor genome



Shuffling of Genomes *In Vitro*: Breeding multiple donor genomes with multiple acceptor genome

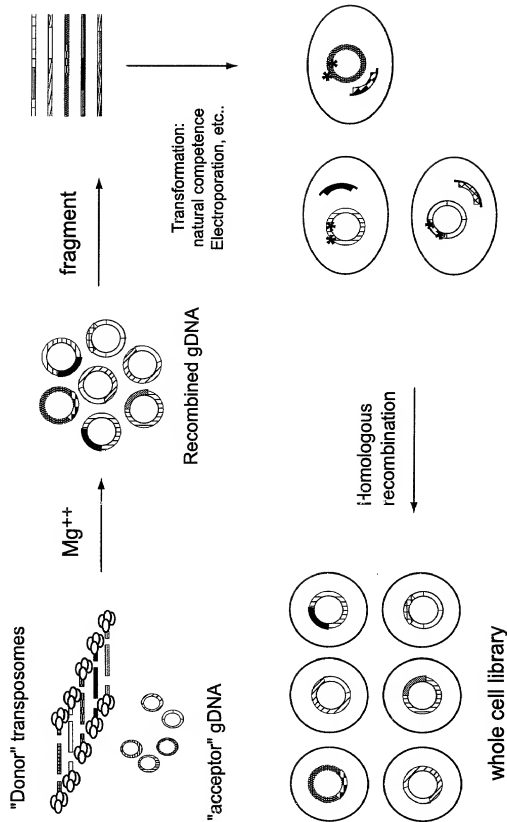


Fig. 4C

Shuffling of Genomes *In Vitro*: Split pool recursive in vitro recombination of multiple genomes

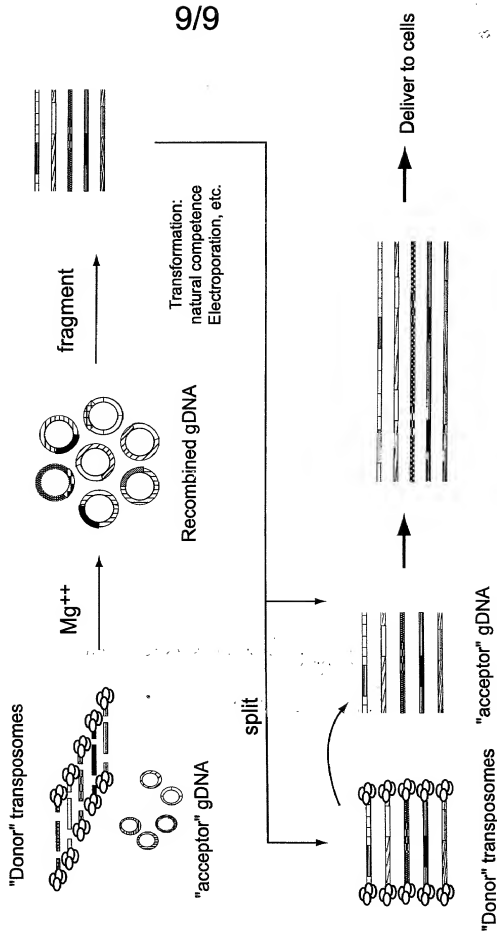


Fig. 4D